

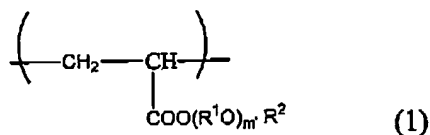
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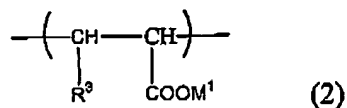
## Listing of Claims

This listing of claims replaces all prior listings and versions of the claims.

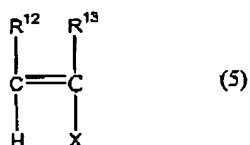
1. (Previously Presented) A polycarboxylic acid cement dispersant which provides a cement composition having a penetrating resistance value exponent of 55 MPa or more and a slump retention exponent of 80% or more, wherein the polycarboxylic acid cement dispersant comprises a polycarboxylic acid polymer having a polyoxyalkylene ester constituent unit (I) represented by the following general formula (1):



wherein  $\text{R}^1\text{O}$  may be the same or different and each represents an oxyalkylene group containing 2 to 18 carbon atoms;  $m^1$  represents the average molar number of addition of the oxyalkylene groups and is a number of 100 to 200; and  $\text{R}^2$  represents a hydrogen atom or a hydrocarbon group containing 1 to 3 atoms, and a carboxylic acid constituent unit (II) represented by the following general formula (2):



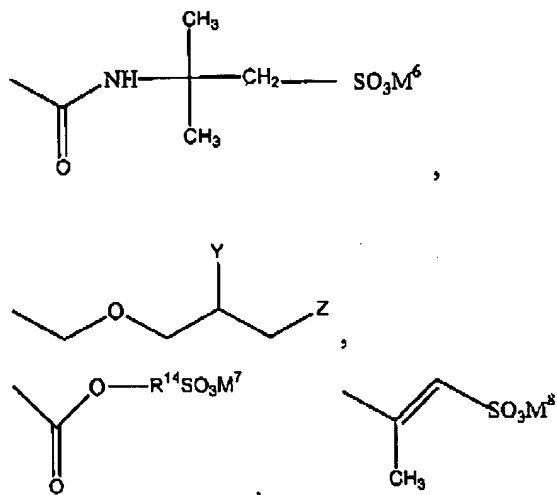
wherein  $\text{R}^3$  represents a hydrogen atom, a methyl group or  $-\text{COOM}^2$ ; and  $\text{M}^1$  and  $\text{M}^2$  may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium, wherein the polycarboxylic acid cement dispersant is obtained by copolymerizing the monomer components further comprising a sulfonic acid group-containing monomer represented by the following general formula (5):



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wherein  $R^{12}$  and  $R^{13}$  may be the same or different and each represents a hydrogen atom or a methyl group; Y and Z represent a hydroxyl group or  $-SO_3M^9$ , wherein in the case when Y represents a hydroxyl group, Z represents  $-SO_3M^9$ , while in the case when Y represents  $-SO_3M^9$ , Z represents a hydroxyl group;  $R^{14}$  represents an alkylene group containing 2 to 4 carbon atoms; and  $M^6$ ,  $M^7$ ,  $M^8$  and  $M^9$  may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium.

2. (Canceled)

3. (Previously Presented) A method of producing a concrete product which comprises adding the polycarboxylic acid cement dispersant according to claim 1 to the concrete product and curing under a condition of a temperature of 30°C or more.

4. (Canceled)

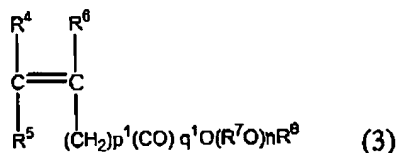
5. (Previously Presented) A method of producing a concrete product which comprises adding the polycarboxylic acid cement dispersant according to claim 1 curing by covering a periphery of a formwork with an insulating material.

6. (Canceled)

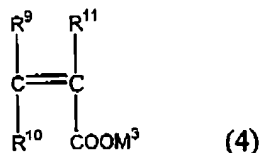
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7. (Withdrawn) A method of producing a concrete product which makes use of a copolymer derived by using monomer components comprising a monomer (A) represented by the following general formula (3):

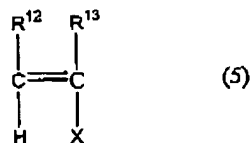


(wherein  $\text{R}^4$ ,  $\text{R}^5$  and  $\text{R}^6$  may be the same or different and each represents a hydrogen atom or a methyl group;  $p^1$  represents a number of 0 to 2;  $q^1$  represents a number of 0 or 1;  $\text{R}^7\text{O}$  may be the same or different and each represents an oxyalkylene group containing 2 to 18 carbon atoms;  $n$  represents the average molar number of addition of the oxyalkylene groups and is a number of 2 to 300; and  $\text{R}^8$  represents a hydrogen atom or a hydrocarbon group containing 1 to 30 carbon atoms), monomer (B) represented by the following general formula (4)



(wherein  $\text{R}^9$  and  $\text{R}^{10}$  may be the same or different and each represents a hydrogen atom, a methyl group or  $-\text{COOM}^4$ , provided that  $\text{R}^9$  and  $\text{R}^{10}$  does not simultaneously represent  $-\text{COOM}^4$ ;  $\text{R}^{11}$  represents a hydrogen atom, a methyl group or  $\text{CH}_2\text{COOM}^5$ ,  $\text{R}^9$  and  $\text{R}^{10}$  may be the same or different and each represents a hydrogen atom or a methyl group; and  $\text{M}^3$ ,  $\text{M}^4$  and  $\text{M}^5$  may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium), and

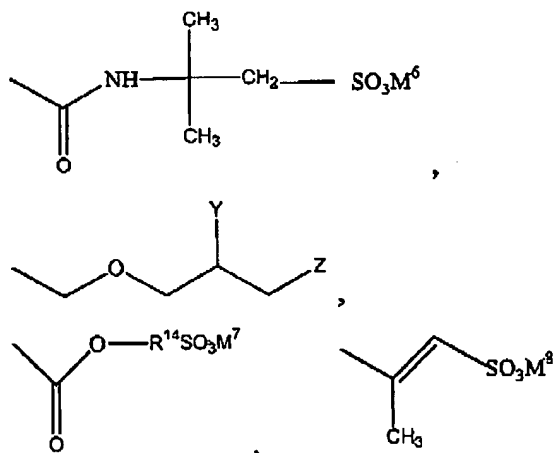
a monomer (C) represented by the following general formula (5):



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(wherein  $\text{R}^{12}$  and  $\text{R}^{13}$  may be the same or different and each represents a hydrogen atom or a methyl group; Y and Z represent a hydroxyl group or  $-\text{SO}_3\text{M}^9$ , in which in the case where Y represents a hydroxyl group, Z represents  $-\text{SO}_3\text{M}^9$ , while in the case where Y represents  $-\text{SO}_3\text{M}^9$ , Z represents a hydroxyl group;  $\text{R}^{14}$  represents an alkylene group containing 2 to 4 carbon atoms; and  $\text{M}^6$ ,  $\text{M}^7$ ,  $\text{M}^8$  and  $\text{M}^9$  may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium),

wherein the mass ratio of the monomer (C) relative to the total monomer components is not less than 0.1% by mass and not more than 35% by mass.

8. (Withdrawn) The method of producing a concrete product according to claim 7, which comprises a process of curing under a condition of a temperature of  $30^\circ\text{C}$  or more.

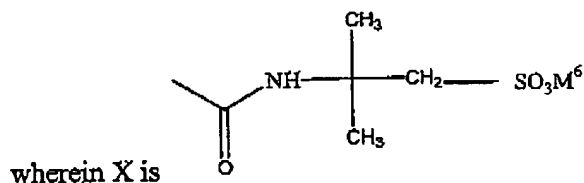
9. (Withdrawn) The method of producing a concrete product according to claim 7, which comprises a process of curing by covering a periphery of a formwork with an insulating material.

10. (Canceled)

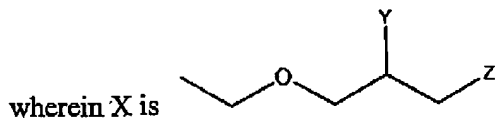
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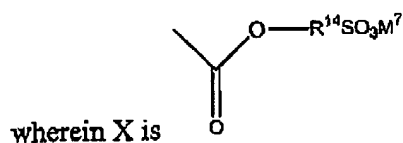
11. (New) The polycarboxylic acid cement dispersant according to claim 1



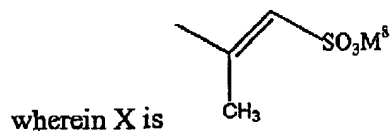
12. (New) The polycarboxylic acid cement dispersant according to claim 1



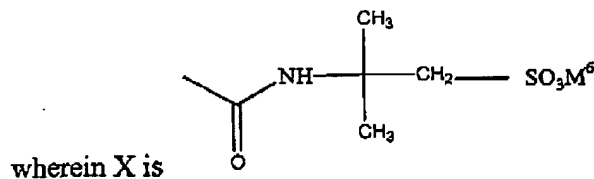
13. (New) The polycarboxylic acid cement dispersant according to claim 1



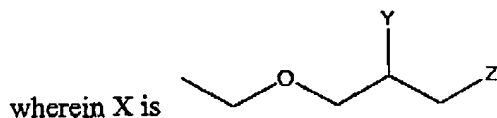
14. (New) The polycarboxylic acid cement dispersant according to claim 1



15. (New) The method of producing a concrete product according to claim 3



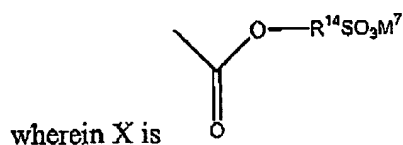
16. (New) The method of producing a concrete product according to claim 3



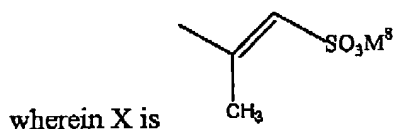
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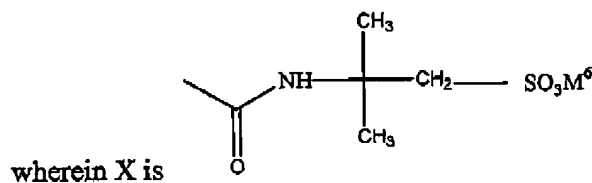
17. (New) The method of producing a concrete product according to claim 3



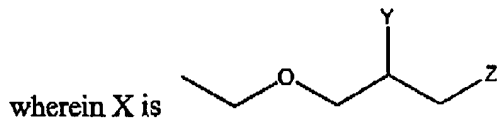
18. (New) The method of producing a concrete product according to claim 3



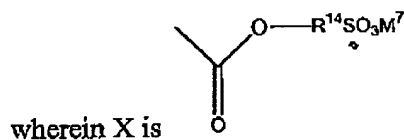
19 (New) The method of producing a concrete product according to claim 5



20. (New) The method of producing a concrete product according to claim 5



21. (New) The method of producing a concrete product according to claim 3



22. (New) The method of producing a concrete product according to claim 3

